

Groundwater Collaboration Workgroup - Best Management Practices / Sensitive Areas Workgroup Recommendations

Proposed Amendments to NR 151.075

"No mechanical applications of manure on soils with a soil depth less than 12 inches to bedrock" (Page 6).

"1-2 feet – Avoid mechanical application of manure on these soils and use other available acres, OR, if avoidance not possible, implement all of the following mitigation practices:

- a. No liquid manure applications
- b. No fall manure applications
- c. Apply only solid manure in spring
- d. Limit solid manure application rate to 15 tons/acre/year
- e. Apply within 10 days or less from planting date or apply on a growing crop.
- f. If possible, treat solid manure to reduce pathogens by composting or other methods" (Page 38).

"2-3 feet – Avoid manure application on these soils and apply on other available acres OR if avoidance is not possible, implement all applicable mitigation practices (based on manure type) below:

- a. Apply solid manure with significant pathogen reduction (composting);
- b. Apply liquid manure with demonstrated pathogen treatment/reduction to 500,000 CFU/ ml or less AND implement the following: (omitted)
- c. Apply liquid or solid manure to growing crop or within 10 days of crop establishment;
- d. Limit solid manure application rate to 15 tons/acre/year;
- e. Limit total liquid manure application rate to NR 214.17(4) (d), Table 3 rate or UW A2809 rate, whichever is less....
- i. Do not inject or incorporate manure below 4 inches depth" (Pages 39, 40).

"(3) No mechanical application of manure on areas of cropland or pastures that have 24 inches or less of separation between the ground surface and saturation."

"(7) Mechanical application of manure and headland stacking of manure is prohibited on soils with 5 feet or less to Silurian bedrock when soils are frozen or snow covered."

"(9) Mechanical application of manure is prohibited for soils with less than 2 feet to Silurian bedrock."

"(10) For soils with 2 to 3 feet to Silurian bedrock, the following shall apply:

- a. No mechanical application of solid manure unless:
  1. Incorporated within 72 hours to no more than 4 inches below ground; and
  2. At least one of the following is implemented:
    - a. Manure is applied at a rate of 15 tons/acre/year, or UW A2809 annual application rate, whichever is less
    - b. Manure is applied within 10 days of the planting date or applied on perennial or other established crop
    - c. Manure is composted or treated to reduce pathogen levels via practices to a fecal coliform bacteria density of less than 500,000 colony-forming units, or

most probable number per  
gram total solids on a dry  
weight basis

- b. No mechanical application of liquid manure unless:
  - 1. Pre-tillage is completed, unless exempt under sub. (c); and
  - 2. Liquid manure is injected or incorporated within 24 hours to no more than 4 inches below ground; and
  - 3. At least one of the following is implemented:
    - a. Total liquid manure application is limited to Table 1 or to the UW A2809 annual application rate, whichever is less, to prevent hydraulic overloading of the soil.
    - b. Liquid manure is applied within 10 days of the planting date or applied on perennial or other established crop..."

"3-5 feet – Avoid manure application on these soils and apply on other available acres OR if avoidance not possible, implement all of the following mitigation practices:

- a. Limit liquid manure application rate to 13,500 gallons/week\* and follow UW A2809 to determine total liquid manure application; use low application rate that is safe and practical to avoid hydraulic loading of soil."
- d. "Limit solid manure application to UW A2809 rates and incorporate within 72 hours;
- e. Do not inject or incorporate manure below 6 inches deep" (Pages 41, 42).

"5-20 feet – 3.

- a. Limit weekly liquid manure application rate to NR. 214.14(4)(d), Table 3 and follow UW A2809 to determine total liquid manure application; use as low application rate that is safe and practical; avoid hydraulic loading of soil by using split applications.
- b. Limit solid manure application to UW A2809 rates and incorporate within 72 hours;
- c. Do not inject or incorporate manure below 8 inches depth..." (Pages 42, 43).

"(11) For soils with 3 to 5 feet to Silurian bedrock, the following shall apply:

- a. No mechanical application of solid manure unless:
  1. Incorporated within 72 hours to no more than 6 inches below ground; and
  2. At least one of the following is implemented:
    - a. Total liquid manure application is limited to sub. (10)(b)3. Table 1 rates or to the UW A2809 annual application rate, whichever is less, to prevent hydraulic overloading of the soil"
    - b. (omitted); c. (omitted).

"(12) For soils with 5 to 20 feet to Silurian bedrock, the following shall apply:

- a. No mechanical application of liquid manure unless:
  1. Pre-tillage is completed unless exempt under sub. (b); and
  2. Liquid manure is injected or incorporated within 24 hours to no more than 8 inches below ground; and
  3. At least one of the following is implemented:
    - a. Total weekly liquid manure application is limited to sub. (10)(b)3. Table 1 rates, or to the UW A2809 annual application rate, whichever is less, to prevent hydraulic overloading of the soil.
    - b. Liquid manure is applied within 10 days of the planting date or

applied on perennial or other established crop.

- c. Liquid manure is treated to substantially reduce pathogen levels via practices to a fecal coliform bacteria density of less than 500,000 most probable number or colony-forming units per 100 milliliter sample.

“Inspect fields according to a., b., and c. below for depth to bedrock, groundwater conduits, contributing channels or areas that drain to groundwater conduits, drain tiles that may drain/discharge to groundwater conduits and evidence of fracture traces; keep inspection logs and update NMP maps with identified features.

- a. Inspect annual cropped fields in spring before manure application, tillage, or planting or in late summer/fall after crop harvest and before manure application, tillage, or planting.
- b. Inspect alfalfa and perennial cropped fields in spring and summer before or 7-10 days after cutting—look for uneven crop growth that follows distinct lines.
- c. Use direct measurements (backhoe, probe, test pits, etc.) to verify depth to bedrock and groundwater” (Page 6).

“(4)(d) The plan shall use county soils or other methods as a planning tool to identify Silurian bedrock within or adjacent to cropland and pastures.”

“(5) Prior to mechanical application of manure on croplands or pastures, use infield bedrock verification to locate Silurian bedrock having soil depths less than 5 feet.”

“Direct Conduit to Groundwater: 3. No manure application within:

- a. 1000 feet of public “community” water supply wells...
- b. 250 feet of private potable and public “non-community” water supply wells...
- c. 100 feet of all other “direct conduits to groundwater” and 300 feet when soil is frozen or snow covered;
- d. 100 feet of defined channels and concentrated flow paths that lead to 3a, 3b, or 3c.

“(13) Mechanical manure applications are prohibited within:

- a. 1000 feet of a community water system as defined in s. NR 811.02.
- b. 250 feet of a private water system and non-community water system as defined in s. NR 812.07.
- c. An area within 300 feet upslope or 100 feet downslope of a direct conduit to groundwater.

- d. 100 feet of defined channels that lead to sub. (a), (b), or (c)."